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Alternatives

The alternatives described in this EIS are designed to meet the purpose and need described in Chapter 2, to manage mixed HLW and mixed transuranic waste (SBW and newly generated liquid waste) in a way that complies with regulatory requirements, such as the land disposal restrictions under RCRA, to protect the health and safety of INEEL workers and the public, and to conserve the nation's natural and financial resources. The alternatives selected for detailed analysis in this EIS are described in this chapter, and the impacts are presented in Chapter 5, Environmental Consequences. Those alternatives considered but not selected for detailed analysis are briefly described in Section 3.3 along with reasons for their elimination from further study [40 CFR 1502.14(a)]. DOE's selection process for identifying alternatives is described in Appendix B, Waste Processing Alternative Selection Process. DOE has not identified a preferred alternative; it will be identified in Section 3.5 of the Final EIS.

Alternatives

This EIS has two types of alternatives: waste processing and facility disposition. Waste processing alternatives provide means to retrieve, process, and dispose of or prepare for disposal the mixed HLW and mixed transuranic waste (SBW and newly generated liquid waste). (Appendix C.7, Description of Input and Final Waste Streams contains information on the product waste stream quantities associated with each alternative.) Facility disposition alternatives describe possible scenarios to disposition facilities that have been or will be used in INEEL's HLW program. The waste processing alternatives and the facility disposition alternatives generally can be considered to be independent of each other. However, the number and type of facilities required, and therefore the scope and methods for facility disposition, will depend on the waste processing alternative selected. Thus, the various options for implementing the waste processing alternatives affect facility disposition and the number and type of existing facilities and facilities that would be constructed to support waste processing depend upon the alternative selected. Although waste processing and facility disposition alternatives are separate, the cumulative impacts analysis combines the effects of waste processing and facility disposition.

There are five waste processing alternatives, including the No Action Alternative, which is required by the National Environmental Policy Act regulations [40 CFR 1502.14(d)]. Some of these waste processing alternatives have multiple options for implementation. The alternatives and their options are described in Section 3.1.

There are six facility disposition alternatives as described in Section 3.2. The six disposition alternatives are not applicable to all facilities

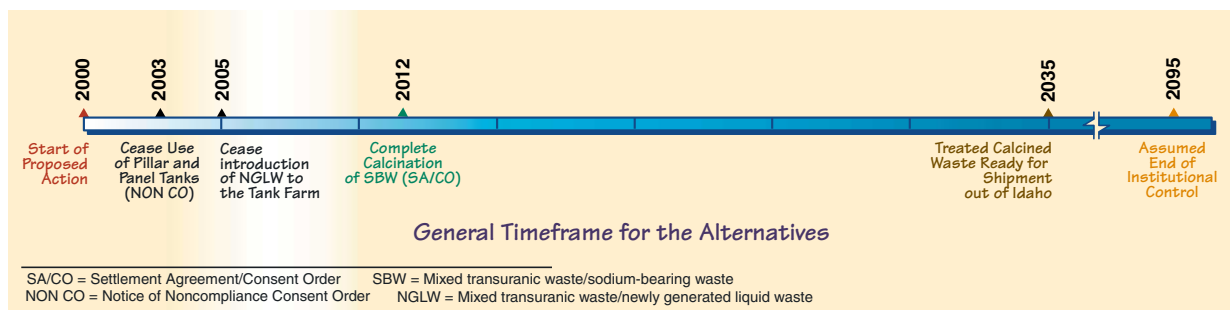
because of varying residual amounts of radioactive and/or chemical contaminants.

For the ease of the reader, the waste processing alternatives do not include any specific facility disposition options, except for those cases where facility disposition is an integral part of implementation of the option (e.g., disposal of low-level waste Class A or Class C type grout in the Tank Farm and bin sets). However, DOE intends to make decisions regarding HLW facilities (including existing facilities and facilities that would be constructed under the waste processing alternatives).

Time lines for alternatives analyzed in the EIS

The general timeframe for the waste processing alternatives analyzed in this EIS extends from the year 2000 through 2035. The year 2035 is when, in accordance with the Settlement Agreement/Consent Order, DOE must have all HLW treated and ready to be shipped to a storage facility or repository outside of Idaho. Specifically, this agreement states that all the liquid in the eleven 300,000-gallon, below-grade tanks would be calcined, treated, and ready to be transported out of Idaho by a target date of December 31, 2035. Within this time frame and depending on the different treatment and disposal options analyzed, each waste processing alternative has a specific time line.

The general timeframe is delineated on the time line shown below. Interim milestones shown on this time frame represent key HLW commitments DOE made with respect to management of the liquid in the eleven 300,000-gallon below grade tanks and calcine in the bin sets. The time



line reflects a commitment by DOE to end use of the five pillar and panel tanks by 2003. In the year 2005, DOE intends to divert all newly generated liquid waste to tanks that are compliant with State and Federal regulations. The source of this waste is largely decontamination activities at INTEC that are not directly associated with the HLW management program and liquids generated by other INEEL facility operations. Liquid waste produced through the HLW management program, such as calciner operations and decontamination activities, will continue to be added to the tanks until all waste is calcined or otherwise processed and the tanks are emptied to their heels. The Settlement Agreement/Consent Order specifies that calcination shall be complete by 2012. Treatment of calcine can continue until 2035, when it must all be ready to be moved out of Idaho. However, if a storage facility or repository is available before 2035, then DOE could begin shipping the treated waste out of Idaho at an earlier date.

Except for the No Action Alternative and a slightly modified version, the Continued Current Operations Alternative, time frames for the remaining waste processing alternatives adhere to a completion date of 2035. However, because some of the waste processing alternatives evaluate new treatment technologies at INTEC that would not use the calciner, the 2012 date for having all liquids out of the tanks would not be practicable under those alternatives. Time frames in these instances are dictated by the amount of time needed to design, construct, and permit a new treatment facility and how long it will take to treat the liquid and the calcine using the selected technology.

For environmental consequence calculations, the processing alternatives analyzed in this EIS assume treated waste destined for storage or disposal sites outside of Idaho will be ready for shipment by 2035, but there is no assumption about what specific years the waste would be shipped. Impacts associated with storage of treated HLW at INEEL are presented on an annual basis out to the year 2095. Also, from 2035 to 2095, DOE would no longer be processing waste but would be decommissioning and dispositioning facilities. For purposes of analysis, the year 2095 was selected as the end of DOE's institutional control, which is in agreement with the *INEEL Comprehensive Facility and Land Use Plan* (DOE 1997) and the planning basis for the Waste Area Group 3 under the CERCLA. Loss of institutional control means that DOE no longer controls the site and therefore can no longer ensure that impacts to the public are within established limits. However, DOE is required to maintain controls on radioactive waste or materials under its jurisdiction until such time controls are no longer needed.

In addition to the timeframes previously discussed, the Settlement Agreement/Consent Order states: "In the event any required NEPA analysis results in the selection after October 16, 1995, of an action which conflicts with any action identified in this Agreement, DOE or the Navy may request a modification of this Agreement to conform the action in the Agreement to that selected action. Approval of such modification shall not be unreasonably withheld."

3.1 Description of Waste Processing Alternatives

DOE's five waste processing alternatives are:

1. No Action
2. Continued Current Operations
3. Separations
4. Non-Separations
5. Minimum INEEL Processing

These alternatives and their options for implementation are described in Sections 3.1.1 through 3.1.5. For purposes of analysis, DOE has broken down the actions to implement each alternative and option into discrete projects. There are multiple projects comprising an alternative or option. Some projects are used repeatedly for the various alternatives and options. Projects that are very similar between alternatives and options are generally represented by a single bounding project. This modular approach allows DOE, in its Record of Decision, to select an alternative containing elements of more than one alternative described in this chapter, producing a hybrid alternative.

The major INTEC facilities that would be constructed under the five waste processing alternatives are presented in Table 3-1. INTEC was selected for analysis as the site for these waste processing facilities because of the proximity to the Tank Farm, bin sets, and other existing facilities required for the alternatives. Proximity is important because it shortens piping runs, increases efficiency of operations, and minimizes areas where radioactive materials are managed at the INEEL. For more detailed information, see Appendix C.6, Project Information, which describes the individual projects. Table

3-2 provides an overview of some of the key attributes of the alternatives and options. Section 5.2 describes the environmental impacts of these alternatives.

3.1.1 NO ACTION ALTERNATIVE

The No Action Alternative (Figure 3-1) would maintain the status quo beginning in the year 2000. It assumes the calciner at the New Waste Calcining Facility would be placed in standby in June 2000. The New Waste Calcining Facility would not undergo upgrades to make it compliant with the Maximum Achievable Control Technology rule for air emissions, and no mixed transuranic waste would be calcined after June 2000. The High-Level Liquid Waste Evaporator would continue operating to reduce the volume of mixed transuranic waste and enable DOE to cease use of the five pillar and panel tanks in the Tank Farm in 2003. The mixed transuranic waste inventory at the time the High-Level Liquid Waste Evaporator completes its operation in 2003 would remain in the Tank Farm. Maintenance necessary to protect workers and the environment would continue, but there would be no major upgrades. The mixed HLW calcine in bin set 1 (which does not meet current design standards) would be transferred to bin set 6 or 7, as described in the SNF & INEL EIS Record of Decision (60 FR 28680; June 1, 1995) or modifications would be made to mitigate stress on bin set 1. All mixed HLW would remain in the bin sets indefinitely. All tanks available in the Tank Farm (i.e., all tanks except the pillar and panel tanks) would be full of mixed transuranic waste in approximately 2017. Other facilities depending on the capacity of the Tank Farm for operation eventually would be shut down due to their inability to discharge liquid waste. Under this alternative, DOE would not meet its commitment to cease use of the Tank Farm by 2012 and to make its mixed HLW road ready by 2035.

Table 3-1. INTEC facilities that would be constructed under the waste processing alternatives.

	Alternative/Option								
	No Action	Continued Current Operations	Full Separations	Planning Basis	Transuranic Separations	Hot Isostatic Pressed Waste	Direct Cement Waste	Early Vitrification	Minimum INEEL Processing
Calcine Retrieval and Transport System (bin set 1 only)	●	●	–	–	–	–	–	–	–
Calcine Retrieval and Transport System	–	–	●	●	●	●	●	●	●
NGLW Treatment Facility	–	●	–	●	–	●	●	–	–
Waste Separations Facility	–	–	●	●	–	–	–	–	–
Transuranic Separations Facility	–	–	–	–	●	–	–	–	–
Vitrification Plant	–	–	●	●	–	–	–	–	–
Class A Grout Plant	–	–	●	●	–	–	–	–	–
Class C Grout Plant	–	–	–	–	●	–	–	–	–
Hot Isostatic Press Facility	–	–	–	–	–	●	–	–	–
Cement Facility	–	–	–	–	–	–	●	–	–
Early Vitrification Facility	–	–	–	–	–	–	–	●	–
Interim Storage Facility ^a	–	–	●	●	–	●	●	●	●
Low-Activity Waste Disposal Facility	–	–	●	–	●	–	–	–	● ^b
Calcine Packaging Facility	–	–	–	–	–	–	–	–	●
SBW and NGLW Treatment Facility	–	–	–	–	–	–	–	–	●
New Analytical Laboratory	–	–	●	●	●	●	●	●	●
Waste Treatment Pilot Plant	–	–	●	●	●	●	●	●	●

a. The supporting engineering documents for this EIS refer to this facility as an “Interim Storage Facility.” The use of the word “interim” means that the waste is stored road ready until shipment to a repository.

b. For vitrified low-activity waste returned from Hanford.

● indicates the facility is associated with the alternative.

Dash indicates the facility is not required.

NGLW = newly generated liquid waste

Table 3-2. Summary of key attributes of the waste processing alternatives.

Alternatives	Product waste volume	Primary treatment technology	Product waste disposal	Transportation	Indefinite or road-ready storage ^a
No Action Alternative	None ^b	None	Untreated waste remains at INEEL	None	Untreated mixed transuranic waste and mixed HLW calcine stored indefinitely in Tank Farm and bin sets, respectively
Continued Current Operations Alternative	110 m ³ RH TRU waste (from tank heels)	Calcine mixed transuranic waste/SBW Grout mixed transuranic waste/NGLW ^c and tank heel waste	RH TRU waste to WIPP	280 RH TRU containers ^d to WIPP	Mixed HLW and mixed transuranic waste/SBW calcine stored indefinitely in bin sets
Separations Alternative					
<u>Full Separations Option</u>	470 m ³ vitrified HLW 27,000 m ³ LLW Class A type grout	Vitrify separated HLW fraction Grout separated LLW fraction	Vitrified HLW to NGR LLW Class A type grout to: New onsite disposal facility or Tank Farm and bin sets or offsite disposal facility	780 HLW canisters ^e to NGR 25,100 LLW containers ^f to disposal facility	Vitrified HLW storage pending disposal at NGR
<u>Planning Basis Option</u>	470 m ³ vitrified HLW 30,000 m ³ LLW Class A type grout 110 m ³ RH TRU waste (from tank heels)	Calcine mixed transuranic waste/SBW Vitrify separated HLW fraction Grout separated LLW fraction Grout mixed transuranic waste/NGLW ^c and tank heel waste	Vitrified HLW to NGR LLW Class A type grout to offsite disposal facility RH TRU waste to WIPP	780 HLW canisters to NGR 27,900 LLW containers to disposal facility 280 RH TRU containers to WIPP	Vitrified HLW storage pending disposal at NGR
<u>Transuranic Separations Option</u>	220 m ³ RH TRU waste 22,700 m ³ LLW Class C type grout	Solidify separated TRU fraction Grout separated LLW fraction	RH TRU waste to WIPP LLW Class C type grout to: New onsite disposal facility or Tank Farm and bin sets or offsite disposal facility	560 RH TRU containers to WIPP 21,100 LLW containers to disposal facility	None

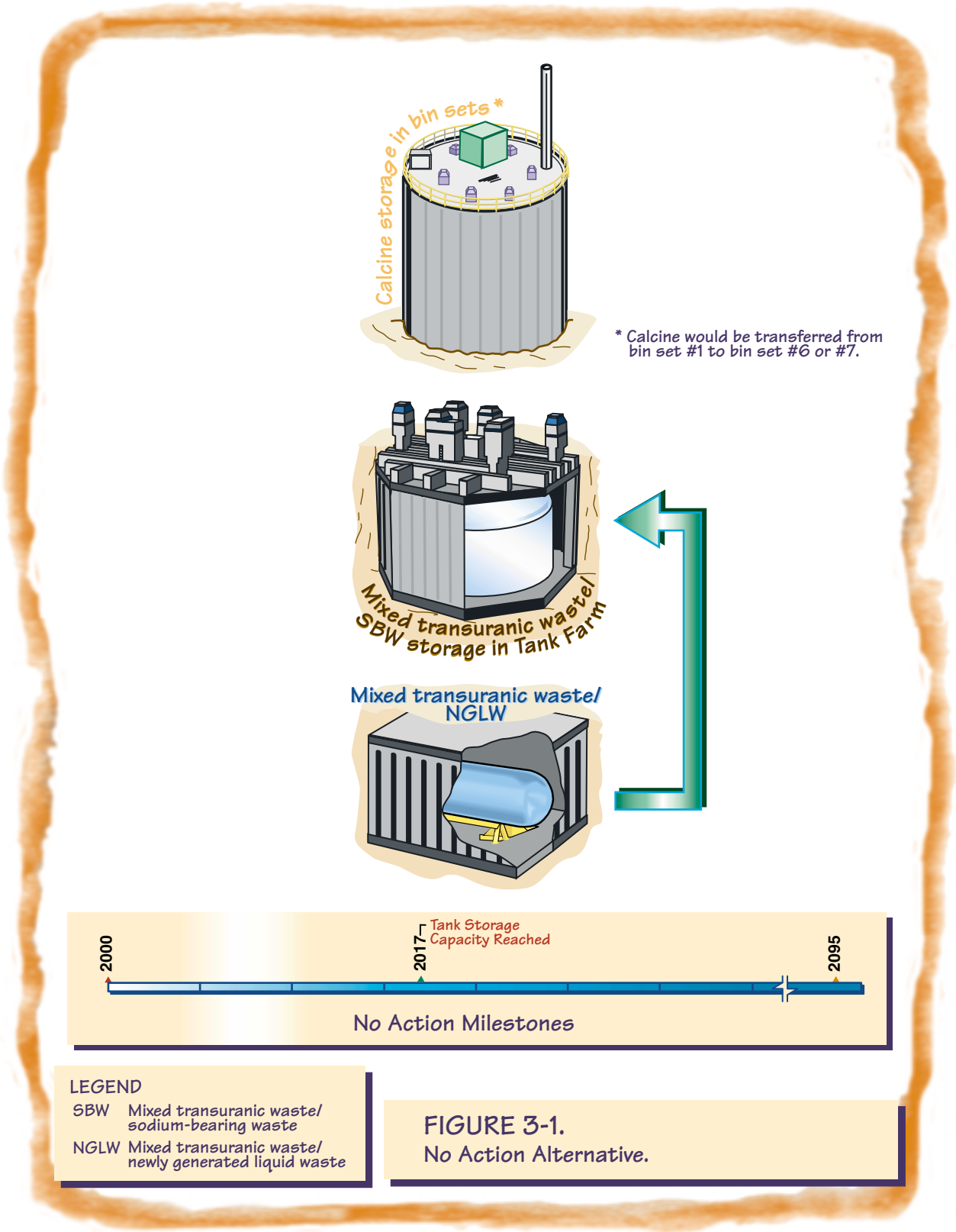
Table 3-2. Summary of key attributes of the waste processing alternatives (continued).

Alternatives	Product waste volume	Primary treatment technology	Product waste disposal	Transportation	Indefinite or road-ready storage ^a
Non-Separations Alternative					
<u>Hot Isostatic Pressed Waste Option</u>	3,400 m ³ HIP HLW 110 m ³ RH TRU waste (from tank heels)	HIP calcined HLW and mixed transuranic waste/SBW Grout mixed transuranic waste/NGLW ^c and tank heel waste	HIP HLW to NGR RH TRU waste to WIPP	5,700 HLW canisters to NGR 280 RH TRU containers to WIPP	HIP HLW storage pending disposal at NGR
<u>Direct Cement Waste Option</u>	13,000 m ³ cemented HLW 110 m ³ RH TRU waste (from tank heels)	Hydroceramic cement of calcined HLW and mixed transuranic waste/SBW Grout mixed transuranic waste/NGLW ^c and tank heel waste	Cemented HLW to NGR RH TRU waste to WIPP	18,000 HLW canisters to NGR 280 RH TRU containers to WIPP	Cemented HLW storage pending disposal at NGR
<u>Early Vitrification Option</u>	8,500 m ³ vitrified HLW 360 m ³ RH TRU waste (from mixed transuranic waste)	Vitrify calcine Vitrify mixed transuranic waste	Vitrified HLW to NGR RH TRU waste to WIPP	11,700 HLW canisters to NGR 900 RH TRU containers to WIPP	Vitrified HLW storage pending disposal at NGR
Minimum INEEL Processing Alternative At INEEL	7,500 m ³ CH TRU waste from mixed transuranic waste	CsIX and grout mixed transuranic waste	CH TRU waste to WIPP Vitrified LLW to new onsite disposal facility or an offsite commercial disposal facility Vitrified HLW to NGR	37,500 CH TRU containers ^g to WIPP 625 HLW canisters ^h to NGR 5,500 LLW containers ⁱ to disposal facility 3,700 HLW canisters containing calcine to Hanford	Vitrified HLW storage pending disposal at NGR

Table 3-2. Summary of key attributes of the waste processing alternatives (continued).

Alternatives	Product waste volume	Primary treatment technology	Product waste disposal	Transportation	Indefinite or road-ready storage ^a
At Hanford	14,400 m ³ vitrified LLW fraction from calcine 730 m ³ vitrified HLW fraction from calcine	Vitrify separated LLW fraction and HLW fraction	Vitrified LLW fraction returned to INEEL Vitrified HLW fraction returned to INEEL	5,550 LLW containers to INEEL 625 HLW canisters to INEEL	None

- a. Chapter 5 presents annualized impacts for these storage activities through the period of institutional control.
- b. The No Action Alternative would not produce a waste form suitable for disposal. The 800,000 gallons of concentrated mixed transuranic waste/SBW and 4,200 cubic meters of mixed HLW would remain untreated.
- c. For purposes of analysis, mixed transuranic waste/NGLW grout was assumed to be managed as low-level (process) waste.
- d. RH TRU waste containers are assumed to be WIPP half-containers with a capacity of 0.4 cubic meter. For purposes of analysis, all options were assumed to use the WIPP half-containers for packaging RH TRU waste.
- e. INEEL HLW canisters are assumed to be similar to those used at the Savannah River Site Defense Waste Processing Facility (2 feet in diameter and 10 feet long).
- f. INEEL LLW containers are assumed to be concrete cylinders with a capacity of approximately 1 cubic meter.
- g. CH TRU waste containers are assumed to be 55-gallon drums (0.2 cubic meters).
- h. Hanford HLW canisters are assumed to be similar to those used for the Tank Waste Remediation System (2 feet in diameter and 15 feet long).
- i. Hanford LLW containers are assumed to be 4 feet x 4 feet x 6 feet steel boxes with a usable capacity of 2.6 cubic meters.
- CH = contact-handled; CsIX = cesium ion exchange; HIP = Hot Isostatic Pressed; LLW = low-level waste; NGLW = newly generated liquid waste; NGR = national geologic repository; RH = remote-handled; TRU = transuranic; WIPP = Waste Isolation Pilot Plant.



New Waste Calcining Facility

The New Waste Calcining Facility (CPP-659) includes several treatment systems: Calciner, Debris Treatment and Containment Storage Building, and HEPA Filter Leach System.

The calciner provides pretreatment of mixed HLW and mixed transuranic waste/SBW by calcination, resulting in conversion of the liquid waste to a solid granular form. Before calcination, the liquid waste is processed through the High-Level Liquid Waste Evaporator (also housed in Building CPP-659) for volume reduction and concentration, which makes the waste more amenable to calcination. Calcination of mixed transuranic waste/SBW may involve the addition of aluminum nitrate or other additives (approximately three volumes of aluminum nitrate per volume of SBW) to prevent the sodium and potassium nitrates in the waste from clogging the calcine bed at the current operating temperature. Operation of the calciner at elevated temperature (600°C versus 500°C) may reduce the need for these large amounts of inert additives, increasing the mixed transuranic waste/SBW processing rate and reducing the volume of calcine produced. Calcination does not meet the applicable RCRA treatment standards for the INTEC waste and is considered an interim treatment step to stabilize the waste in a solid form pending its final treatment.

The Notice of Noncompliance Consent Order requires that the calciner be placed in standby in June 2000, pending DOE's decision whether to seek a permit or close the facility. Before continuing calciner operations, upgrades to the offgas treatment system would be required to comply with the Maximum Achievable Control Technology air emissions standards. The alternatives in this EIS consider whether to continue operating the calciner and make the upgrades. Other operations at the New Waste Calcining Facility described below

would continue independent of DOE's decision regarding future calciner operations.

The Debris Treatment and Containment Storage Building comprises decontamination cubicles, a spray booth, a decontamination cell, and low-level decontamination room. Several treatment technologies are currently used to treat debris in accordance with the RCRA debris treatment standards (40 CFR 268.45). These treatment technologies include water washing, chemical washing, high-pressure water and steam sprays, and ultrasonic cleaning. The Debris Treatment and Containment Storage Building will also provide treatment by liquid abrasive and/or carbon dioxide blasting and bulk washing. Liquid wastes generated by the Debris Treatment and Containment Storage Building (such as spent decontamination solution) are managed in the INTEC liquid radioactive waste treatment system.

The HEPA Filter Leach System treats contaminated high-efficiency particulate air (HEPA) filters, using chemical extraction to remove radionuclides and hazardous constituents from used HEPA filters. The system can treat both transuranic and mixed low-level filters. After leaching, the filters are packaged for disposal. If the treated filters meet the applicable performance standards, they will be disposed of as low-level waste. The leachate generated by HEPA filter leaching is managed in the INTEC liquid radioactive waste treatment system (Process Equipment Waste Evaporator, Liquid Effluent Treatment and Disposal Facility, and Tank Farm). The bottoms from the Process Equipment Waste Evaporator system are sent to the Tank Farm. The bottoms from the Liquid Effluent Treatment and Disposal Facility are recycled to the New Waste Calcining Facility or sent to the Tank Farm pending final treatment (see Figure 1-6, Current INTEC high-level waste system simplified flow diagram) (DOE 1998a).

What went into the eleven 300,000-gallon below grade tanks?

Liquid high-level waste: The highly radioactive solution remaining after uranium was extracted from dissolved spent nuclear fuel.

Liquid Sodium Bearing Waste (SBW): SBW is a term that has been used to describe liquid wastes generated in association with HLW activities, but which specifically did not come from the first step in processing where uranium is initially separated from dissolved spent nuclear fuel. Examples of activities that generated SBW include processes to purify the extracted uranium, operation of the calciner, and the decontamination of equipment and facilities associated with HLW. Because these activities, particularly decontamination, used significant quantities of sodium, the resulting liquid waste has historically been described by this characteristic. However, from a radionuclide perspective, the SBW is more appropriately classified as a transuranic waste. It is also a mixed waste because it contains hazardous materials that require additional management and regulatory considerations. Therefore, this EIS refers to SBW as mixed transuranic waste, a convention consistent with DOE Order 435.1.

Newly Generated Liquid Waste: Over the years, liquid waste from a variety of other sources has been added to the liquid HLW

and mixed transuranic waste in the below-grade tanks. Sources include leachates from treating contaminated HEPA filters, decontamination liquids from INTEC operations that are not associated with HLW management activities and liquid wastes from other INEEL facilities. Because of diverse sources, these liquids have various contaminant levels and generally would be considered low-level radioactive wastes. However, the newly generated liquid is evaporated at INTEC, which concentrates any radionuclides. If transuranic radionuclides are concentrated to certain levels, then the newly generated liquid waste is more properly characterized as a transuranic waste.

Newly generated liquid waste has historically been added to the liquid mixed transuranic waste in the below-grade tanks. Consequently it has been similarly managed, calcined, and transferred to bin sets where it is combined with HLW. However, DOE has determined that by September 30, 2005, new tanks will be constructed and available to accept the newly generated liquid waste. These tanks will comply with all regulatory requirements and the liquid will be treated and disposed of according to whether it is mixed transuranic waste (level of transuranic radionuclides exceeds threshold concentrations) or mixed low-level waste (transuranics do not exceed threshold concentrations).

Facilities required for the No Action Alternative would include the bin sets, which would continue to store the mixed HLW; the Tank Farm, which would continue to store the mixed transuranic waste; the High-Level Liquid Waste Evaporator, which would continue to concentrate mixed transuranic waste/SBW; and the

Process Equipment Waste Evaporator and the Liquid Effluent Treatment and Disposal Facility which would continue to evaporate mixed transuranic waste (newly generated liquid waste). The major facilities and projects required to implement the No Action Alternative are listed in Appendix C.6.



What Is a Tank Heel?

Tank heels are the residues that remain in the tanks after as much material as possible has been removed using existing waste transfer equipment. Waste processing activities such as calcination may recycle a portion of the waste to the tanks, resulting in increased concentrations of certain components, like mercury, in the tank heels relative to the original waste.

3.1.2 CONTINUED CURRENT OPERATIONS ALTERNATIVE

Under this alternative (Figure 3-2), current operations of all existing waste facilities and processes would continue, including the New Waste Calcining Facility, High-Level Liquid Waste Evaporator, Process Equipment Waste Evaporator, Liquid Effluent Treatment and Disposal Facility, Remote Analytical Laboratory, Tank Farm, bin sets, Coal-Fired Steam Generating Facility, and Substation. The New Waste Calcining Facility calciner would have been placed in standby in June 2000, in accordance with the Notice of Noncompliance Consent Order, then upgraded to comply with the Maximum Achievable Control Technology air emissions requirements. The upgrades would be completed by 2010. The High-Level Liquid Waste Evaporator would continue to operate to allow the pillar and panel tanks to be taken out of service in 2003. The upgraded New Waste Calcining Facility calciner would operate from 2011 through 2014 to process the remaining liquid mixed transuranic waste/SBW.

After 2014, the New Waste Calcining Facility calciner would operate as needed until the end of 2016. Beginning in 2015, the mixed transuranic waste (newly generated liquid waste) would be

Low-Level Waste Classification

The Nuclear Regulatory Commission regulations define classes of commercial low-level waste that are suitable for near surface disposal. The waste classification (Class A, B, or C) is determined by two considerations: (1) the concentration of long-lived radionuclides that present a long-term hazard (i.e., the hazard will persist beyond the period during which institutional controls, improved waste forms, and deeper disposal are effective) and (2) the concentration of short-lived radionuclides. The concentrations of specific radionuclides for the classes are identified in tables provided in 10 CFR 61.55. The alternatives in this EIS include options that would produce separated low-level fraction wastes that meet the Class A (under Full Separations, Planning Basis, and Minimum INEEL Processing) and Class C (under Transuranic Separations) definitions. Although the Nuclear Regulatory Commission classification system is not applicable to DOE waste disposal activities (which are performed in accordance with DOE Order 435.1), the EIS includes disposal options for the separated low-level waste fraction involving commercial facilities that would be subject to these requirements.

Class A waste is usually segregated from other waste classes at a disposal site because it is not required to meet the stability requirements that apply to the other classes. Class A waste is subject only to the minimum requirements in 10 CFR 61.56(a) (e.g., no cardboard packaging, little free standing liquids, no pyrophoric materials, not capable of detonation or explosive decomposition). In addition to these minimum requirements, Class B and C wastes must meet the more rigorous stability requirements in 10 CFR 61.56(b). These requirements include providing a structurally stable waste form that will maintain its dimensions and form under the expected disposal conditions. For example, the Class B or C wastes must be able to withstand the weight of overburden and compaction equipment and the presence of water without slumping, collapse, or other failure. Structural stability can be provided by the waste form itself (e.g., grout) or by placing the waste into a disposal container that provides the required stability. Class C wastes may require additional measures at the disposal facility to protect against inadvertent intrusion.

processed through a cesium ion exchange column, evaporated, and grouted for disposal. The cesium-loaded resin would be dried and stored in the bin sets. Mercury becomes concentrated in the tank heels as a result of offgas scrub from the calcining process. The waste containing mercury would be removed from the tank heels, treated, packaged, and sent to the Waste Isolation Pilot Plant for disposal.

As described for the No Action Alternative, the calcine in bin set 1 would be transferred to bin

set 6 or 7 or modifications would be made to mitigate stress on bin set 1. The requirement to treat all the HLW so that it would be road ready for shipment out of Idaho by 2035 would not be met since the calcine would remain indefinitely in the bin sets.

The major facilities and projects required to implement the Continued Current Operations Alternative are listed in Appendix C.6, except for transportation projects, which are addressed in Appendix C.5.